

CS 22B - Python for Nonmajors II Course and

Contact Information:

Instructor:	Aarohi Chopra
Email:	aarohi.chopra@sjsu.edu
Class Room, Day and Time:	Duncan Hall 450 Monday and Wednesday 9:00 AM -10:15 AM PST
Prerequisites:	CS22A with a grade of C- or better, or consent of the instructor. This course is intended for students pursuing a Minor in Bioinformatics.

Class and Office Hour Links *Subject to Change*:

	Days and Times:	Link:
Classroom	Monday and Wednesday 9:00 AM -10:15 AM PST Duncan Hall 450	Meeting ID: 838 8535 6987
Group Office Hours	Monday TBA	Live session via Zoom: https://sjsu.zoom.us/j/83652926183?pwd=L1FTRWorRUdtbHkyRUMxZkE2d1VLZz09 (https://sjsu.zoom.us/j/83652926183?pwd=L1FTRWorRUdtbHkyRUMxZkE2d1VLZz09) Meeting ID: 836 5292 6183 Password: office

Individual Office Hours (20 min slots)	Friday 12:00 PM – 1:00PM PST	Live session via Zoom Booked with Calendly: https://calendly.com/aarohi-chopra/office https://calendly.com/aarohi-chopra/office - Earliest: 2 weeks beforehand - Latest: Night beforehand
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*Passwords are subject to change.

Course Description:

Learning hands-on Python programming skills.

Skills include:

- casting a problem as an algorithm
- translating an algorithm to executable code
- debugging and testing code

Applications focus on computational techniques to understand, analyze, and visualize data.

Course Format:

- Canvas Learning Management System is your main source for information:
<https://sjsu.instructure.com>
 - All course material will be posted on Canvas.
 - You are responsible to check Canvas regularly for any updates.
- The class will be mostly spent in lecture mode with participation.
- Written assessments and a project will be used to measure student learning
- It will be recorded on Zoom till 6/12 (Subject to Change)

Course Learning Outcome (CLO)

Upon successful completion of this course, you will be able to

1. Write programs using various data types, and using basic techniques such as assignment, function calls, loops, and conditionals.
2. Write recursive functions.
3. Use and manipulate several built-in data structures such as lists, arrays, and dictionaries, including nested data structures.
4. Break a medium-sized problem down into smaller parts and solve each sub-problem individually.
5. Test and debug programs.
6. Use objects and associated methods provided by the programming language.

7. Implement objects and associated methods.

Recommended Texts/readings - Not required:

Advanced Python for Biologists by Martin Jones, 2017,

ISBN-13: 978-1495244377, ISBN-10: 1495244377.

All course readings, examples, exercises, etc. will be assigned and provided by the instructor.

Python Programming Environment:

We will be using Google Colab (<https://colab.research.google.com/> (<https://colab.research.google.com/>)) with Chrome or any supported web browser: and program in Python within Jupyter notebook. There is no additional software installation is required.

If students want local software, Jupyter notebook is recommended.

Grading Information:

Grading calculation will be based on the following:

- Final Exam 20%
- Hands On 35%
- Participation 5%
- Midterm 1 10%
- Midterm 2 10%
- Project 20%

Late Submission: No late submission for the project, midterms, or final exam.

However, under certain circumstances, two lab reports per student might be accepted late. It will need to be handed in within a week and will be graded with 10% off for each days extension.

Exams: You must submit only your own work only. Copying and any other forms of cheating will not be tolerated and will result in a failing grade (F) for the course. If copying and any other forms of cheating are done on any type of assessment (midterm and final), this will be combined with other disciplinary actions from the university.

Grading Scale:

Percentage Range	Letter Grade	Percentage Range	Letter Grade
97.0% – 100%	A plus	72.0% – 76.99%	C

93.0% – 96.99%	A	70.0% – 71.99%	C minus
90.0% – 92.99%	A minus	67.0% – 69.99%	D plus
87.0% – 89.99%	B plus	62.0% – 66.99%	D
82.0% – 86.99%	B	60.0% – 61.99%	D minus
80.0% – 81.99%	B minus	<60.0%	F
77.0% – 79.99%	C plus		

1. Final Exam – 20%:

- Contact me if you cannot make it/need to reschedule it at least 3 weeks beforehand.

2. Hands-on – 35%:

- Help you understand the material and increase your skills
- You are welcome to work with each other, but do not copy the code.
- Only accepted through Canvas

3. Participation – 5%:

- **I-Clicker** for participation. Not graded on accuracy.
- Need to be present for all but 1 question for points for the day
- Need 60% of IClicker Points to get 100% on Participation

4. Midterm 1 and 2 – 20% (10% each):

- Contact me if you cannot make it to the midterm at least 2 weeks beforehand.

5. Project – 20%:

1. Will include a paper, your group's code, and a 10-min presentation
2. Groups of 2

Classroom Protocols and Etiquettes:

- **Attendance:** Strongly recommended and encouraged
 - **Be Punctual**
 - **Stay on top of coursework:** Students are responsible for their knowledge and any course-related work.
 - **Follow the rules of etiquette:** Be respectful. Be dressed appropriately if you want to turn your camera on.
 - **Zoom recordings of the lectures:** Posted within the end of the day. Email me if they are not.
 - You are only allowed to view it. You do not have permission to share the records or ANY course materials with someone who is not in this class.
 - These are protected by the instructor's copyright
 - **Accessibility:** Any student that needs accommodations or assistive technology due to a disability should work with the Accessible Education Center (AEC), and the instructor.

COVID Requirements

Students are required to follow the University guidelines regarding COVID policies.

- If you are feeling sick, please stay at home. Please take a COVID test to ensure you do not have COVID.
- If you have COVID or are exposed, please, ensure you quarantine and stay at home.
- Everyone will read and acknowledge: January 2022 [CoS COVID-19 Training](https://drive.google.com/drive/folders/1Vmp39U9-CNpbwRobtZsGIZPTgRwV_Nh6) (https://drive.google.com/drive/folders/1Vmp39U9-CNpbwRobtZsGIZPTgRwV_Nh6) and [SJSU Phase Adapt Plan](https://www.sjsu.edu/healthadvisories/sjsu-adapt/phases/index.php) (<https://www.sjsu.edu/healthadvisories/sjsu-adapt/phases/index.php>).

Students registered for a College of Science (CoS) class with an in-person component should view the [CoS COVID-19 and Monkeypox Training](https://drive.google.com/drive/folders/1Vmp39U9-CNpbwRobtZsGIZPTgRwV_Nh6) (https://drive.google.com/drive/folders/1Vmp39U9-CNpbwRobtZsGIZPTgRwV_Nh6) slides for updated CoS, SJSU, county, state, and federal information and guidelines, and more information can be found on the [SJSU Health Advisories](https://www.sjsu.edu/healthadvisories/) (<https://www.sjsu.edu/healthadvisories/>) website. By working together to follow these safety practices, we can keep our college safer. Failure to follow safety practice(s) outlined in the training, the SJSU Health Advisories website, or instructions from instructors, TAs, or CoS Safety Staff may result in dismissal from CoS buildings, facilities, or field sites. Updates will be implemented as changes occur (and posted to the same links).

Technology Requirements

Students are required to have an electronic device (laptop, desktop or tablet) with a camera and built-in microphone. [SJSU has a free equipment loan program available for students](http://www.sjsu.edu/equipmentcheckout) (<http://www.sjsu.edu/equipmentcheckout>). Students are responsible for ensuring that they have access to reliable Wi-Fi during tests. If students are unable to have reliable Wi-Fi, they must inform the instructor, as soon as possible or at the latest one week before the test date to determine an alternative. See Learn Anywhere website for current Wi-Fi options on campus.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' Syllabus Information web page at <http://www.sjsu.edu/gup/syllabusinfo/> (<http://www.sjsu.edu/gup/syllabusinfo/>).

Course Schedule – Tentative and Subject to Change:

Week	Date	Topic	Assignment Due
1	8/22	Syllabus. Introductions. Course Expectations. Google Collab. Recap of CS22A.	
1	8/24	Finish Recap. Dictionaries. Start Complex Data Structures.	
2	8/29	Complex Data Structures.	
2	8/31	Iterators, Comprehensions, and Generators	
3	9/5	Labor day	Hands-On 1
3	9/7	Finish Up and Review Any Material. Functional Programming.	
4	9/12	Functional Programming.	
4	9/14	Midterm Review Part 1	Hands-On 2
5	9/19	Functional Programming	
5	9/21	Midterm Review Part 2	

6	9/26	Midterm 1	
6	9/28	Explanation of Midterm 1. Generators. Introduction to Object-Oriented Programming.	
7	10/3	Object-Oriented Programming.	Hands-on 3
7	10/5	Object-Oriented Programming.	
8	10/10	Object-Oriented Programming.	
8	10/12	Exception Handling.	
9	10/17	Work Day.	Hands-On 4
9	10/19	Object-Oriented Programming. Recursion.	
10	10/24	Object-Oriented Programming. Recursion.	
10	10/26	Object-Oriented Programming. Recursion.	
11	10/31	Start Intro to Pandas.	
11	11/2	Intro to Pandas.	Hands-On 5
12	11/7	Data Visualization.	
12	11/9	Data Visualization.	Hands-On 6
13	11/14	Work-day (Optional Class)	
13	11/16	Work-day (Optional Class)	Hands-On 7
14	11/21	Work-day (Optional Class)	

14	11/23	Non-Instructional Day – (NI)	
15	11/28	Presentation (Mandatory Class)	ALL PROJECT MATERIAL
15	11/30	Presentation (Mandatory Class)	
16	12/5	Final Review	Hands-On 8
	12/13	FINAL (7:15-9:30 AM)	

Important dates:

- Saturday, Aug 27: Waitlist ends
- Thursday, September 15: **Last Day to Drop Classes without a "W" Grade and Last Day to Add Classes via MySJSU**